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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,269	12/12/2003	Taiji Torigoe	246584US-6CONT	8642

22850 7590 08/16/2005

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EXAMINER	
TUROCY, DAVID P	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,269	TORIGOE ET AL.	
	Examiner	Art Unit	
	David Turocy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6 and 9-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6 and 9-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/6/05 has been entered.

Response to Amendment

2. The applicant's amendments, filed 5/5/2005, have been fully considered and reviewed by the examiner. The examiner notes the amendments to independent claims 1 and 6, the cancellation of claims 2,3, 5,7 and 8, and the addition of new claims 10-26. Claims 1, 4, 6, and 9-26 are pending.

Response to Arguments

3. Applicant's arguments filed 6/6/2005 have been fully considered but they are not persuasive.

The applicant has argued against the Khan et al reference, stating that it does not teach or even suggest a spraying velocity of 300 m/s or more or a base-material temperature of 300°C or less.

Regarding the spraying velocity of 300 m/s or more. The showing of criticality of a spray velocity of 300 m/s or more is unsubstantiated by a showing of fact. Khan makes no reference to a specific spray velocity, but inherently has a spray velocity. It remains the examiners position that it is within the skill of one of ordinary skill in the art to select a spray velocity high enough for the particles to reach the substrate but low enough as to not cause disrupt to the process, i.e. damage the substrate, damage the spray particles, and/or damage the adhesion of the particles because they are bouncing off the substrate. In addition, it is the examiners position that the amount of time determines the formation of an oxide film or not, rather then the specific spray velocity of the particles. Therefore, since there is no showing of a specific velocity by Khan, it would have been obvious to optimize the value for the spray velocity to provide a proper repair of the substrate.

Regarding the base-material temperature, Khan makes not reference to a specific temperature, but does suggest drying the applied mixture at a moderate temperature of 20°C – 100°C. Since drying of the applied mixture occurs at such a temperature, it would have been obvious to one of ordinary skill in the art at the time of the invention to form another undercoat layer by spraying performed in the atmosphere at room temperature, prior to drying the layer at the required temperature, which lies below 300°C, as required by applicants claim.

4. The applicant has argued against the Rigney et al reference, stating that it teaches removing the entire topcoat and does not remove a damaged portion of the

topcoat. The applicant has argued against the Rigney et al reference, stating that it does not teach or even suggest a spraying velocity of 300 m/s or more or a base-material temperature of 300°C or less.

Regarding removing the entire topcoat, the examiner agrees Rigney et al teaches of removing the entirety of the topcoat over the airfoil, as shown in Column 7, line 5. However, the claim does not limit the removal of the topcoat to only the damaged portion, the claim only requires that the damaged portion *is* removed and the removal of the entire surface, as disclosed by Rigney et al., results in the removal of the damaged portion. While the examiner agrees that expensive metals such as Pt, Rh, and/or Pd are used as material for repair, such repair only takes place at discrete, local areas without the complete removal of the entire undercoat or the removal of undercoat from adjacent areas of the coating, therefore reducing the cost of repair (Column 8, lines 10-15). The fact that a combination would not be made by businessmen for economic reasons does not mean that a person of ordinary skill in the art would not make the combination because of some technological incompatibility. See *In re Farrenkopf*, 713 F.2d 714, 219 USPQ 1 (Fed. Cir. 1983).

Regarding the spraying velocity of 300 m/s or more. The showing of criticality of a spray velocity of 300 m/s or more is unsubstantiated by a showing of fact. Rigney makes no reference to a specific spray velocity, but inherently has a spray velocity. However, it is the examiners position that it is within the skill of one of ordinary skill in the art to select a spray velocity high enough for the particles to reach the substrate but low enough as to not cause disrupt to the process, i.e. damage the substrate, damage

the spray particles, and/or damage the adhesion of the slurry because of bouncing off the substrate. In addition, it is the examiners position that the amount of time determines the formation of an oxide film or not, rather then the specific spray velocity of the particles. Therefore, since there is no showing of a specific velocity by Rigney, it would have been obvious to optimize the value for the spray velocity to provide a proper repair of the substrate.

Regarding the base-material temperature, Rigney makes not reference to a specific temperature, and without a showing of a specific temperature for the base-material it would have been obvious to one of ordinary skill in the art at the time of the invention to form another undercoat layer by spraying performed in the atmosphere at room temperature, which lies below 300°C, as required by applicants claim. While the examiner notes the temperature range of 900-1150°C for heating the undercoat, Rigney only teaches this heating of the undercoat after it has already been applied and therefore cannot be considered the application temperature (Column 4, lines 25-30).

Claim Rejections - 35 USC § 112

5. Claims 1, 4, and 10-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The examiner reviewed the entire disclosure and it appears as though the specification does not properly support the entire genus of MCrAlY. While the specification properly supports Nickel based or a cobalt based, MCrAlY is not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the entire genus of MCrAlY. If the applicant can provide support for the claimed genus, then the examiner will withdrawn the rejection.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1, 4, 6, and 9-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6: The claims, as written, are awkward because it is unclear what the particle speed, the temperature, and/or pressure are modifying, whether the spray particle speed, the temperature, and the pressure are required for the formation of another undercoat or for the removal of the original undercoat. The language of the abstract appears to disclose the limitations are required for the formation of another undercoat, by which the examiner is interpreting the claims for the purposes of applying art. (In accordance with the abstract, there appears to be missing commas, where the claim 1 limitation should more reasonably read "forming another undercoat layer formed

of MCrAlY in a removed portion, where the original undercoat has been removed, by spraying performed...". Claim 6 appears to have be missing similar punctuations).

Claims 4 and 9: the phrase "wherein spraying is applied" is indefinite because it does not distinctly claim what is being sprayed.

Claims 6 and 21: the phase "applying spraying" is indefinite because it does not distinctly claim what is being sprayed.

The other dependant claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 4, 12, 18, 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khan et al. (2002/0164417 A1).

Khan teaches a method of repairing a Ni-based alloy part having an undercoat (bond) layer and a topcoat (thermal barrier coating, TBC) (abstract; p. 2). Khan teaches of a turbine component with an undercoat comprising MCrAlY and a topcoat comprising a ZrO_2 based ceramic (P2-3). Khan teaches removal of the TBC and bondcoat only in localized areas of damage, followed by replacement with another undercoat layer, such as by slurry spraying (P26), and with another topcoat layer and teaches forming a topcoat by electron beam process (Paragraph 0003).

Regarding the spray velocity, Khan makes no reference to a specific spray velocity, but inherently has a spray velocity. It is examiners position that it is within the skill of one of ordinary skill in the art to select a spray velocity high enough for the particles to reach the substrate but low enough as to not cause disrupt to the process, i.e. damage the substrate, damage the spray particles, and/or damage the adhesion of the particles because they are bouncing off the substrate. Therefore, since there is no showing of a specific velocity by Khan, it would have been obvious to optimize the value for the spray velocity to provide a proper repair of the substrate. It is well settled that determination of optimum values of cause effective variables such as these process

parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Regarding the base material temperature at spraying, Khan does not teach a specific temperature. However, in the absence of a showing of criticality, it is Examiner's position that selection of room temperature and conditions, which lie below 300 °C, as required by Applicant in claim 1, would have been obvious to an ordinary artisan. Additionally, Kahn teaches drying after coating at a temperature of 20-100°C, lying within the range claimed by Applicant.

Regarding claim 12, 18 and 24: Khan fails to explicitly disclose applying a Ni-based MCrAlY undercoat instead of the removed Co-based MCrAlY undercoat. However Khan does disclose using either a Co-based MCrAlY or a Ni-based MCrAlY as the undercoat, at paragraph 0003, or in other words, Khan discloses Co-based MCrAlY and Ni-based MCrAlY are both known in the art as being suitable for an undercoat of a protective coating. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize either a Co-based MCrAlY or a Ni-based MCrAlY as a replacement coating for the removed portion of undercoat with a reasonable expectation of success because Khan discloses Co-based MCrAlY and Ni-based MCrAlY are both known in the art as being suitable for an undercoat of a protective coating.

Regarding claims 22 and 25, the replacement coatings of Khan are selected for use in gas turbine engines of harsh environments and are known for excellent oxidation resistance.

10. Claims 1, 4, 12, 18, 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rigney et al. (6,274,193) in view of Rigney et al. (6,042,880)

Rigney '193 teaches repairing Ni-based alloy parts having an undercoat (metallic environmental resistant coating) and a topcoat (TBC) by removing the topcoat layer and undercoat layer corresponding to the damaged area and subsequently spraying another undercoat layer thereon and applying another topcoat layer (abstract; Figure 2; col. 3, line 33; col. 4, line 13-24; col. 5, lines 34-44; col. 6). Rigney '193 teaches local repair because complete removal of a layer results in detrimental wall thinning of the base part. Rigney '193 teaches that the undercoat, the metallic layer, may be applied by spraying (col. 6, line 7).

Rigney '193 teaches of application of a ceramic thermal barrier overcoat, but fails to disclose a zirconia-based ceramic as the upper layer.

However, Rigney '880 teaches a typical thermal barrier system is based on a zirconia stabilized by yttria, in particular ZrO_2-$8Y_2O_3$ (Column 1, lines 18-30). Rigney '880 discloses ZrO_2-$8Y_2O_3$ is commonly utilized for turbine engine components and deposited by electron beam deposition (Column 1, lines 18-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rigney '193 to use the outer layer of zirconia based ceramic and in particular ZrO_2-$8Y_2O_3$ as suggested by Rigney '880 to provide a desirable ceramic outer layer for a turbine blade because Rigney '880 discloses a ZrO_2-$8Y_2O_3$ is known in the art to provide an outer ceramic layer for turbines and therefore would reasonably be expected to effectively provide protection for a turbine engine in a corrosive environment.

Regarding the spray velocity, Rigney '193 makes no reference to a specific spray velocity, but inherently has a spray velocity. It is examiners position that it is within the skill of one of ordinary skill in the art to select a spray velocity high enough for the particles to reach the substrate but low enough as to not cause disrupt to the process, i.e. damage the substrate, damage the spray particles, and/or damage the adhesion of the particles because they are bouncing off the substrate. Therefore, since there is no showing of a specific velocity by Rigney '193, it would have been obvious to optimize the value for the spray velocity to provide a proper repair of the substrate. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Regarding the base material temperature at spraying, Rigney '193 does not teach a specific temperature. However, in the absence of a showing of criticality, it is

Examiner's position that selection of room temperature and conditions, which lie below 300 °C, as required by Applicant in claim 1, would have been obvious to an ordinary artisan.

Regarding claims 4 and 23, Rigney '193 teaches that the replacement TBC may be applied by electron beam physical vapor deposition (col. 6, line 40).

Regarding claim 12, 18 and 24: Rigney '193 in view of Rigney '880 fails to explicitly disclose applying a Ni-based MCrAlY undercoat instead of the removed Co-based MCrAlY undercoat. However Rigney '193 does disclose using either a Co-based MCrAlY or a Ni-based MCrAlY as the undercoat, at Column 3, lines 53-58, or in other words, Rigney '193 discloses Co-based MCrAlY and Ni-based MCrAlY are both known in the art as being suitable for an undercoat of a protective coating. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize either a Co-based MCrAlY or a Ni-based MCrAlY as a replacement coating for the removed portion of undercoat with a reasonable expectation of success because Rigney '193 discloses Co-based MCrAlY and Ni-based MCrAlY are both known in the art as being suitable for an undercoat of a protective coating.

Regarding claims 22 and 25, the replacement coatings of Rigney '193 are selected for use in gas turbine engines of harsh environments and are known for excellent oxidation resistance.

11. Claims 6, 9, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Khan in view of Sangeeta (6,485,780).

Khan teach that which is disclosed above regarding spray-coating the new undercoat layer for a Ni-based alloy part, but fail to teach the reduced pressure used, as required by claim 6.

Sangeeta teaches a method of repairing similar products in which a replacement metal is applied to the substrate while diffusion heat treating, such treatment is said to occur in inert gas atmosphere or in a vacuum (col. 8, line 8; col. 7, line 31).

Since Khan teaches application of metal repair coatings similar to that of Sangeeta, and Sangeeta teaches that inert gas atmosphere or a vacuum may be used during such repair coating, Sangeeta would have reasonably suggested the use of reduced pressure in the method of Khan. It would have been obvious to one of ordinary skill in the art to use vacuum pressure conditions, using the teachings of Sangeeta, in the methods of Khan because Sangeeta teaches the interchangeability of atmospheric inert gas conditions and vacuum conditions in such repair coatings. Additionally, in the absence of a showing of criticality, selection of a suitable pressure by an ordinary artisan would have been obvious as a cause-effective variable, as outlined above.

Regarding claim 9, electron beam PVD of the TBC is taught by Rigney '193, as outlined above. Regarding the limitation of applying the basecoat by plasma spray,

Examiner notes that Khan teach spraying and that Khan teaches that the localized repair methods avoid the use of the traditional methods of recoating damaged substrates by plasma spraying. While it is taught to be unneeded in such local repair, it is Examiner's position that application by plasma spraying is taught to be well known in the art and would have been an obvious type of spraying for use in the methods of Khan in view of Sangeeta.

12. Claims 6, 9, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rigney '193 in view of Rigney '880 and further in view of Sangeeta (6,485,780).

Rigney '193 in view of Rigney '880 teach that which is disclosed above regarding spray coating the new undercoat layer for a Ni-based alloy part, but fail to teach the reduced pressure used, as required by claim 6.

Sangeeta teaches a method of repairing similar products in which a replacement metal is applied to the substrate while diffusion heat treating, such treatment is said to occur in inert gas atmosphere or in a vacuum (col. 8, line 8; col. 7, line 31).

Since Rigney '193 in view of Rigney '880 teach application of metal repair coatings similar to that of Sangeeta, and Sangeeta teaches that inert gas atmosphere or a vacuum may be used during such repair coating, Sangeeta would have reasonably suggested the use of reduced pressure in the method of Rigney '193 in view of Rigney '880. It would have been obvious to one of ordinary skill in the art to use vacuum

pressure conditions, using the teachings of Sangeeta, in the methods of Rigney '193 in view of Rigney '880 because Sangeeta teaches the interchangeability of atmospheric inert gas conditions and vacuum conditions in such repair coatings. Additionally, in the absence of a showing of criticality, selection of a suitable pressure by an ordinary artisan would have been obvious as a cause-effective variable, as outlined above.

Regarding claim 9, electron beam PVD of the TBC is taught by Rigney '193, as outlined above. Regarding the limitation of applying the basecoat by plasma spray, Examiner notes than Khan and Rigney '193 teach spraying and that Khan teaches that the localized repair methods avoid the use of the traditional methods of recoating damaged substrates by plasma spraying. While it is taught to be unneeded in such local repair, it is Examiner's position that application by plasma spraying is taught to be well known in the art and would have been an obvious type of spraying for use in the methods of Khan or Rigney '193 in view of Sangeeta.

13. Claims 10, 11, 13, 14 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khan or Rigney et al. (6,274,193) in view of Rigney et al. (6,042,880) and further in view of EP 1085109 A1 by Alperine et al.

*** Please note US Patent 6333118 by Alperine et al. is the patent, which issued from the patent family member EP 1085109 A1. This patent is being used

as an English translation of EP 1085109 A1, therefore all references to column and line number are found in 6333118 ***

Khan and Rigney '193 in view of Rigney '880 teach all the limitations of these claims as discussed above in the 35 USC 103(a) rejection above, but they fail to explicitly disclose applying a ZrO_2-Dy_2O_3 or ZrO_2-Yb_2O_3 topcoat instead of the removed ZrO_2-$8Y_2O_3$ top ceramic layer.

However, Alperine teaches ZrO_2-Dy_2O_3 ceramic has an advantage of reducing the thermal conductivity of a ceramic to a much greater extent then conventionally used ceramics such as ZrO_2-$8Y_2O_3$ (Column 5, lines 7-15, Abstract, Column 2, lines 40-41). Alperine disclose the ZrO_2-Dy_2O_3 ceramic is deposited on a MCrAlY bond layer (Column 4, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Khan or Rigney '193 in view of Rigney '880 to use the ZrO_2-Dy_2O_3 ceramic as the another ceramic overcoat as suggested by Alperine to reap the benefits of a ceramic outer layer with a reduced thermal conductivity.

14. Claims 16, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Khan in view of Sangeeta (6,485,780) or Rigney '193 in view of Rigney '880 and Sangeeta (6,485,780) and further in view of EP 1085109 A1 by Alperine et al.

*** Please note US Patent 6333118 by Alperine et al. is the patent, which issued from the patent family member EP 1085109 A1. This patent is being used as an English translation of EP 1085109 A1, therefore all references to column and line number are found in 6333118 ***

Khan in view of Sangeeta and Rigney '193 in view of Rigney '880 and Sangeeta teach all the limitations of these claims as discussed above in the 35 USC 103(a) rejection above, but they fail to explicitly disclose applying a ZrO_2-Dy_2O_3 or ZrO_2-Yb_2O_3 topcoat instead of the removed ZrO_2-$8Y_2O_3$ top ceramic layer.

However, Alperine teaches ZrO_2-Dy_2O_3 ceramic has an advantage of reducing the thermal conductivity of a ceramic to a much greater extent then conventionally used ceramics such as ZrO_2-$8Y_2O_3$ (Column 5, lines 7-15, Abstract, Column 2, lines 40-41). Alperine disclose the ZrO_2-Dy_2O_3 ceramic is deposited on a MCrAlY bond layer (Column 4, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Khan in view of Sangeeta or Rigney '193 in view of Rigney '880 and Sangeeta to use the ZrO_2-Dy_2O_3 ceramic as the another ceramic overcoat as suggested by Alperine to reap the benefits of a ceramic outer layer with a reduced thermal conductivity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER